

**A NEW VARIETY OF *ERIOGONUM NUDUM*
(POLYGONACEAE) FROM CALIFORNIA**

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ABSTRACT

Eriogonum nudum var. *psychicola* is established for a population confined to the Antioch Dunes area of Contra Costa Co., California, where it is the primary host for the endangered Lange's metalmark butterfly (*Apodemia mormo langei*). Allied to var. *auriculatum* of western California, it may be recognized by its densely pubescent flowers.

KEY WORDS: *Eriogonum*, *Polygonaceae*, Antioch Dunes, Lange's metalmark butterfly, *Apodemia mormo langei*.

The Antioch Dunes wild buckwheat was mentioned in passing in my *Flora of North America* treatment of *Eriogonum* (Reveal 2005: 313). My failure to christen the taxon earlier was because I misplaced the specimens that now serves as the type after it was sent to Maryland. I am grateful to Dr. Charles Delwiche for relocating the collection.

Eriogonum nudum Douglas ex Benth. var. ***psychicola*** Reveal, var. nov.

TYPE: UNITED STATES. **California**, Contra Costa Co., U.S. Fish and Wildlife Service's Antioch Dunes National Wildlife Refuge (Stamm Unit) east of Antioch, north of railroad tracks in a former vineyard on fine pale brown sand associated with *Bromus*, *Centaurea*, *Lactuca*, *Vicia*, and *Clarkia*, ca. N38°00'00", W121°47'50", T2N, R2E, sec. 18, 18 Aug 1997, B. Ertter 15766 (Holotype: UC; isotypes: BH, BM, BRY, CAS, GH, MO, NY, OSC, RSA, TEX, US, UTC, WTU).

A var. *auriculato* floribus dense pubescentibus differt.

Plants erect to spreading perennial herbs, (5) 8–15 (20) dm high, glabrous; *leaves* sheathing and occasionally at lower nodes, the leaf-blades 3–7 (9) cm long, 1.5–4.5 cm wide, densely white tomentose abaxially, floccose or glabrous adaxially, the margins undulate-cripsed; *flowering stems* 2–5 (10) dm long, often stout but not inflated; *inflorescences* cymose, 3–10 (15) dm long, 1–8 dm wide; *involucre*s solitary or 2–3 in a cluster, (3) 4–5 mm long, glabrous; *flowers* white to pinkish, 2.5–3.5 mm long, densely pubescent.

Sand dunes in coastal grassland communities known presently only from the Antioch sand dunes area east of Antioch and just south of the San Joaquin River in northern Contra Costa Co., California; 3–15 (20) m elev. Flowering Jul–Oct.

Other specimens seen:

UNITED STATES. **California**, Contra Costa Co.: Antioch sand dunes, 7 Sep 1965, *W. Knight 1175* (CAS); Antioch sand dunes, 17 Aug 1935, *E. Lee & A. Carter 1630* (JEPS), *1631* (JEPS); sand dunes E of Antioch, 8 Oct 1947, *P. A. Munz 12204* (RSA); 2 mi E of Antioch, 19 Aug 1962, *J. Powell 308a* (CAS, MIN, UC); sand dunes E of Antioch, 7 Oct 1951, *P. Rubtzoff 825* (CAS), *826* (CAS); sand dunes E of Antioch, 14 Sep 1954, *P. Rubtzoff 1745* (CAS, UTC), *1746* (CAS); Antioch, 20 Aug 1958, *R. W. Thorp 20* (UC).

Eriogonum nudum var. *psychicola* (from the Greek *psyche*, butterfly, and *-cola*, dweller) is confined to the Antioch sand dunes area in west central California where it is the primary host for the federally endangered Lange's metalmark butterfly (*Apodemia mormo langei* J. A. Comstock). It grows in association with an atypical form of *Lupinus albifrons* Benth., *Gutierrezia californica* (DC.) Torr. & A. Gray, *Quercus agrifolia* Née, several introduced invasive species (*Bromus diandrus* Roth, *Centaurea solstitialis* L., *Lactuca serriola* L.), and two federally protected plants, *Oenothera deltoides* Torr. & Frém. var. *howellii* Munz (Antioch Dunes evening primrose) and *Erysimum asperum* (Nutt.) DC. var. *angustatum* (Rydb.) B. Boivin (Contra Costa wallflower). Historically, the sand dunes have undergone extensive modification due to industrialization to the point that most of the remaining dunes are now confined to the Antioch Dunes National

Wildlife Refuge. Even so, many of the dunes were mined prior to establishment of the Refuge for high-quality sand and requiring the U.S. Fish and Wildlife Service to bring in sand. Also, the wild buckwheat is being "cultivated" on newer dunes to provide additional plants for the butterfly (Nebhan & Buchmann 1996).

Antioch Dunes wild buckwheat is allied to those varieties of *Eriogonum nudum* in California that have leaves with rather strongly crisped leaf margins that sheath up a glabrous flowering stem.

- A. Leaf-blades densely woolly abaxially and grayish tomentose adaxially; involucre 5–10 per cluster; rare, Sierra Nevada, Tulare Co.....var. *murinum*
- AA. Leaf-blades tomentose abaxially, glabrous or nearly so adaxially; involucre solitary or 2–5 per cluster; widespread, coastal ranges.
 - B. Flowers densely tomentose; rare, Antioch Dunes, Contra Costa Co.....var. *psychicola*
 - BB. Flowers glabrous or (rarely) sparsely pubescent; flowering stems slender or more often slightly to strongly inflated; widespread, west central California.
 - C. Flowering stems not strongly inflated; involucre (2) 3–5; flowers white to pink.....var. *auriculatum*
 - CC. Flowering stems strongly inflated; involucre solitary; flowers pale yellow to yellow or white.....var. *indictum*

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